

CLAIMS

1 .A method for receiving a CDMA signal,  
comprising an operation of correlation with appropriate  
pseudo-random sequences, an operation of  
synchronization for locating data in the correlation  
5 signal obtained, and an operation of retrieving data,  
this method being characterized in that the  
synchronization operation implements double delayed  
multiplication of the sampled correlation signal by  
performing a first delayed multiplication consisting in  
10 multiplying a sample of the correlation signal by the  
conjugate preceding sample (50, 52, 54), then a second  
delayed multiplication consisting in multiplying a  
sample of the signal thus obtained by the conjugate  
preceding sample of said signal obtained (60, 62, 64).

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2. The method according to claim 1, wherein a  
maximum of the signal obtained through double delayed  
multiplication (66, 68) is searched for, and a  
synchronization signal (S) corresponding to said  
20 maximum is delivered.

3. The method according to claim 2, wherein an  
average is calculated of two successive maximum values  
obtained before the synchronization signal is  
25 generated.

4. The method according to claim 4, wherein, the  
correlation signal being a complex signal with a real  
component  $I_k$  and an imaginary component  $Q_k$ , the signal

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obtained after the first delayed multiplication is in turn complex having a real component ( $\text{DOT}^{(1)}_k$ ) and an imaginary component ( $\text{CROSS}^{(1)}_k$ ):

- for performing the first delayed multiplication,  
5 the quantity  $I_k I_{k-1} + Q_k Q_{k-1}$  is calculated, supplying the real component ( $\text{DOT}^{(1)}_k$ ) of the new signal, the quantity  $Q_n I_{n-1} - I_n Q_{n-1}$  is calculated, supplying the component ( $\text{CROSS}_k^{(1)}$ ) of the new signal,

- for performing the second delayed  
10 multiplication, the quantity  $(\text{DOT}_k^{(1)}) (\text{DOT}^{(1)}_{k-1}) + (\text{CROSS}^{(1)}_k) (\text{CROSS}^{(1)}_{k-1})$  is calculated, giving the real component ( $\text{DOT}^{(2)}_k$ ) of the final signal, and the quantity  $(\text{DOT}^{(1)}_{k-1}) (\text{CROSS}^{(1)}_k) - (\text{DOT}_k) (\text{CROSS}^{(1)}_{k-1})$  is calculated, giving the imaginary component  
15 ( $\text{CROSS}^{(2)}_k$ ) of the final signal.

5. A CDMA signal receiver for implementing the method according to claim 1, this receiver comprising:

- correlation means ( $10(I)$ ,  $10(Q)$ ) functioning  
20 with appropriate pseudo-random sequences, and delivering a sampled correlation signal,

- synchronization means (16) for delivering a synchronization signal (S) localizing data within the correlation signal,

25 - decoding means (16) for retrieving the data (D),  
this receiver being characterized in that the synchronization means is a double delayed multiplication means of the sampled correlation signal comprising means (50, 52, 54), (60, 62, 64) capable of  
30 performing a first delayed multiplication consisting in multiplying a sample of the correlation signal by the

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conjugate preceding sample, then a second delayed multiplication consisting in multiplying a sample of the signal thus obtained by the conjugate preceding sample of said signal obtained.

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